

इंटरनेट

मानक

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Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 10490 (1983): Breech Loading Shot Guns, Single and Double Barrel [PGD 28: Arms and Ammunition for Civilian Use]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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**AMENDMENT NO. 1 DECEMBER 2007
TO
IS 10490 : 1983 SPECIFICATION FOR BREECH
LOADING SHOT GUNS, SINGLE
AND DOUBLE BARREL**

(Page 4, Explanatory note, line 7) — Substitute ‘Controllerate of Quality Assurance (Small Arms), Ichapur’ for ‘controllerate of Inspection (Small Arms), Ichapur’.

(PG 28)

Reprography Unit, BIS, New Delhi, India

Indian Standard

SPECIFICATION FOR
BREECH LOADING SHOT GUNS,
SINGLE AND DOUBLE BARREL

1. Scope — Covers the dimensional, material and testing requirements for breech loading shot guns, single and double barrel.

2. Dimensions and Nomenclature

2.1 Dimensions — Shall be as shown in Fig. 1.

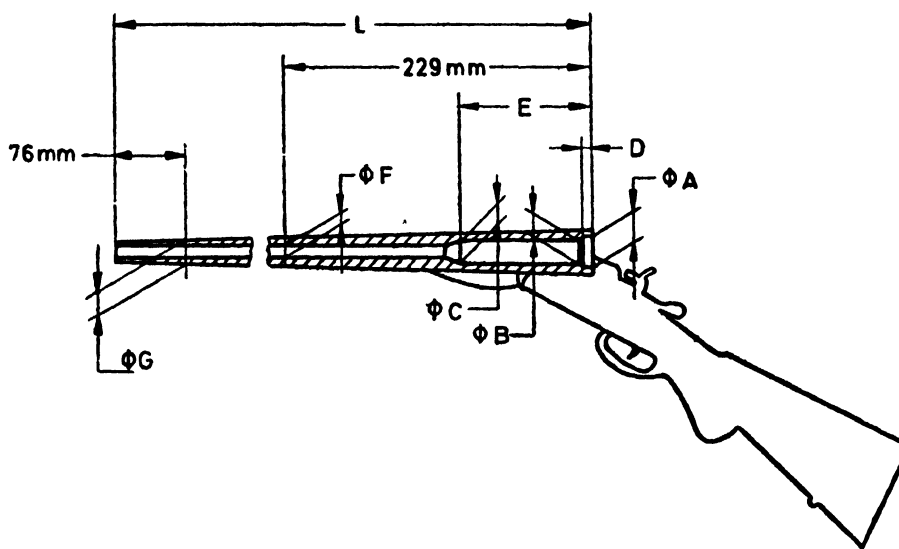


FIG. 1 DIMENSIONS FOR BREECH LODING SHOT GUN

A — Head recess diameter	$\begin{matrix} 22.76 \text{ mm} \\ = 22.50 \text{ mm} \end{matrix}$
B — Under head diameter	$\begin{matrix} 20.90 \text{ mm} \\ = 20.65 \text{ mm} \end{matrix}$
C — Forward diameter	$\begin{matrix} 20.57 \text{ mm} \\ = 20.32 \text{ mm} \end{matrix}$
D — Depth of head recess	$\begin{matrix} 2.007 \text{ mm} \\ = 1.880 \text{ mm} \end{matrix}$
E — Chamber lengths	$\begin{matrix} = 64, 70 \text{ and } 76 \text{ mm} \end{matrix}$
F — Bore diameter at 229 mm from breech end	$\begin{matrix} 19.075 \text{ mm} \\ = 18.034 \text{ mm} \end{matrix}$
G — Outside diameter at 76 mm from muzzle end	$\begin{matrix} = \text{Actual to be recorded and no machining to be done} \\ \text{after proof test} \end{matrix}$
L — Lengths of barrel	$\begin{matrix} = 762, 813, 864 \text{ and } 914 \text{ mm (single barrel)} \\ = 660, 711, 762 \text{ and } 813 \text{ mm (double barrel)} \end{matrix}$

Adopted 24 March 1983

August 1983, BIS

Gr 2

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

2.2 Illustrative sketches of single barrel and double barrel breech loading shot guns along with the nomenclature of parts are shown in Fig. 2 and 3 respectively.

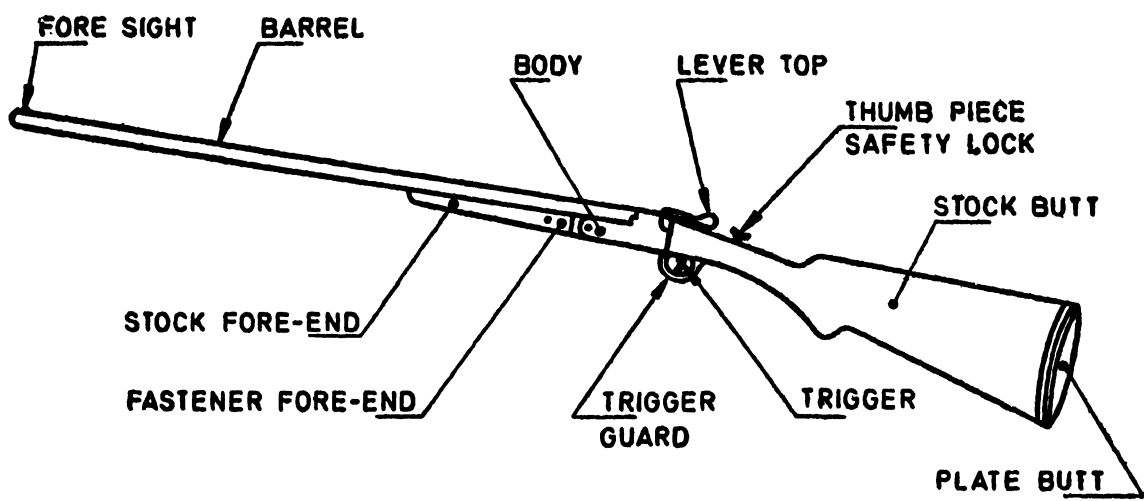


FIG. 2 SINGLE BARREL BREECH LOADING SHOT GUN

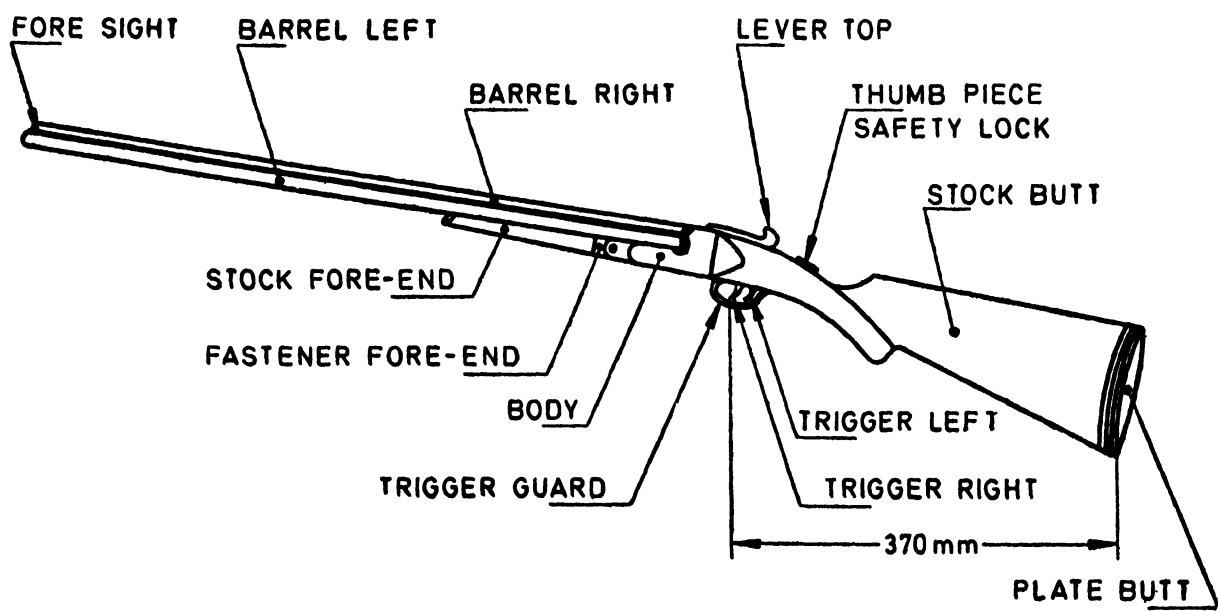


FIG. 3 DOUBLE BARREL BREECH LOADING SHOT GUN

3. Material

Barrel

IS : 5517-1978 'Steel for hardening and tempering' grade 40Cr4Mo3 or 40C8 or 45C8 or 50C8. If made by forging — IS : 1875-1978 'Carbon steel billets, blooms, slabs and bars for forging', Grade 45C8 or 55C8.

Heat treatment — To be heat treated to achieve mechanical properties given below:

UTS=700 to 850 MPa
0.2 percent Proof Stress=480 MPa Min.

Body

IS : 5517-1978 Grade 55C8 or 40Ni 14 or IS : 3930-1979 'Flame and induction hardening steels' Grade 55C 6 or 37 Mn 6 or 47 Mn 6.

Trigger	<p>IS : 5517-1978 grade 35Mn6Mo3 or 35Mn6Mo4 or 40Cr4Mo3 or 40Cr4. If made by forgings — IS : 4369-1967 'Alloy steel billets, blooms and slabs for forgings for general engineering purposes' Grade 40Cr1 or 35Mn 2Mo28.</p> <p>Heat treatment — To be heat treated to achieve mechanical properties given below:</p> <p>UTS=800 MPa Min. 0.2 Percent proof stress=600 MPa Min. Elongation on $5.65\sqrt{A}$=16 percent Min. Load Impact=55J Hardness=250 HV generally and 400 HV locally at the catch point.</p>
Sear	<p>IS : 5517-1978 Grade 31Ni10Cr3Mo6 or IS : 3431-1975 'Steel for volute, helical and laminated springs for automotive suspension' Grade 50Cr4V2 or 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I) - 1977 'Steel for manufacture of laminated springs (railway rolling stock) : Part I Flat sections (first revision)' Grade 55Si7.</p> <p>Heat treatment — To be heat treated to achieve hardness of 350-450 HV generally and 600-700 HV locally at catch point.</p>
Hammer / Pin Firing	<p>IS : 5517-1978 Grade 55C8 or 40Cr4 or 37Cr15. If made by forging — IS : 1875-1978 Grade 55C8 or IS : 4368-1967 Grade 40Cr1 or IS : 2004-1978 'Carbon steel forgings for general purposes' Grade 55C8.</p> <p>Heat treatment — To be heat treated to achieve hardness of 350-450 HV generally and 500-550 HV locally at striking face.</p>
Main spring	<p>IS : 3431-1975 'Steel for volute, helical and laminated springs for automotive suspension (first revision)' Grade 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I) - 1977 'Steel for the manufacture of laminated springs (railway rolling stock) Part I Flat sections (first revision) : Grade 55Si7.</p> <p>Heat treatment — To be heat treated to achieve hardness 450 - 550 HV.</p>
Fastener fore-end	<p>IS : 4432-1967 'Case hardening steels' Grade C10 or C14. Heat treatment — To be heat treated to achieve hardness of 400 - 500 HV.</p>
Spring lever top	<p>IS : 3431-1975 Grade 55Si7 or 60Si7 or 65Si7 or IS : 3885 (Part I) - 1977 Grade 55Si7.</p> <p>Heat treatment — To be heat treated to achieve hardness of 500 - 550 HV.</p>
Catch hook	<p>IS : 5517-1978 Grade 55C8.</p> <p>Heat treatment — To be heat treated to achieve hardness of 400 - 450 HV.</p>
Stock butt and stock fore-end	IS : 7549-1975 'Timber half wrought for sporting rifles'.

4. Functional Requirements

4.1 Clearance between body and barrel after engagement shall not be more than 0.05 mm.

4.2 Concentricity of the firing pin has to be more or less centred and the eccentricity shall not be more than 0.25 mm.

4.3 The protrusion of the pin firing shall be within 1.40 to 1.70 mm. Diameter of the pin firing shall be 1.40 to 1.75 mm with spherical radius at pin firing point.

4.4 The pin firing impact shall be 0.212 Nm.

4.5 For mechanical safety, the gun shall be so designed that it must not fire until and unless it is fully locked in case the gun is internally cocked.

5. Workmanship and Finish

5.1 The guns shall be finished with good surface and smoothness all over preventing sharp corners/edges.

5.2 Timber for wooden parts of gun shall be tough, close and straight grained and it shall be properly seasoned. It shall be free from worm or insect holes, knots, warps or other imperfections. It shall be easily machinable and capable of taking high degree of polish.

6. Inspection and Testing

6.1 The following aspects shall be checked.

- a) Condition of the barrel bore to be checked visually. The bore shall be free from any blemishes like cracks, dents, bulge, damage, rust, pitmarks and tool marks.
- b) In case of double barrel guns, soldering condition of ribs at top and bottom shall be checked for their soundness.
- c) Weight of any gun shall not exceed 3.50 kg except that weight of 813 mm double (side by side) barrel gun shall not exceed 3.80 kg.
- d) Trigger pull shall be 25 to 35 N (In case of double barrel, front trigger for right barrel to be kept 2.5 N less than rear trigger for left barrel).

6.2 Proof Testing

6.2.1 Proof testing of each gun is a statutory requirement under the Arms Act, 1958 and Arms Rules 1962, and is to be carried out in accordance with the Rules, Regulations and Scales applicable to the Proof of Sporting Arms in India issued by the Ministry of Defence (see also Explanatory Note).

6.2.2 After proof testing, final inspection shall be carried out to ascertain any damage, deformation or deviation as a result of proof firing.

6.2.3 After proof testing no further machining inside the bore or on outside diameter shall be carried out.

6.3 Pattern Shooting Test — In order to achieve accuracy in the gun, barrel bore is choked towards the muzzle end. However, provision of choke is optional. Gun manufacturers have the choice to select the type of choke to be incorporated in the gun and the same has to be indicated.

At 36.5 m range on a target having 762 mm diameter, the pellets shall hit the target as follows:

Type of Choke	Amount of Choke/ Constriction in Bore mm	Percentage of Original Number of Pellets in the Shot Charge percent Min
Full choke	1.020	70
Three quarter choke	0.762	65
Half choke	0.508	60
Quarter choke	0.254	55
Improved cylinder	0.76 to 0.127	50
True cylinder	Nil	40

7. Marking

7.1 Identification marks shall be stamped on every gun so as to show distinctly:

- a) Maker's name and registered trade - mark, if any;
- b) Serial number (registered number) of the gun; and
- c) Year of manufacture.

7.2 BIS Certification Marking — Details available with the Bureau of Indian Standards

8. Surface Protection — All metal surfaces shall be protected from rust by phosphating followed by appropriate sealing by paint/oil as per IS : 6005-1970 ' Code of practice for phosphating of iron and steel ' or alternatively all metal surfaces shall be protected by suitable process of blueing/browning to ensure same results as obtained by phosphating in accordance with IS : 6005-1970.

EXPLANATORY NOTE

This standard covers the dimensional, material and testing requirements for breech loading shot guns, single and double barrel. Shot guns are required by civilians for games and hunting purposes.

Proof testing of each gun is a statutory requirement under Arms Act, 1958 and Arms Rules, 1962 and is to be carried out in accordance with Rules, Regulations and Scales applicable to the Proof of Sporting Arms in India as amended from time to time and issued by the Ministry of Defence, Government of India. For this purpose the procedure to be followed for submission of shot guns for proof testing has been laid down by the controller of Inspection (Small Arms), Ichapur and the procedure booklet as well as inspection gauges are available with them. Proof testing and marking is done as per above rules and procedure. They have also laid down the procedure to be followed for pattern shooting test which is available with them.

In preparation of this standard, assistance has been derived from the Arms Act 1958 and Arms Rules 1962 of Government of India.